

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
PRIMARY WATER TANK ASSEMBLY #1 #2, ITEM 131, ITEM 162 ----- SV769592-30 (1)	2/1R	131FM02A External leakage, water.  Seal failure.	END ITEM: Water leakage to ambient.  GFE INTERFACE: Depletion of the water reservoir. Loss of cooling. Possible helmet fogging.  MISSION: Terminate EVA when the water supply drops below CWS limits.  CREW/VEHICLE: None for single failure. Possible loss of crewman with loss of SOP.  TIME TO EFFECT /ACTIONS: Minutes. If there is no water to provide cooling/defog open purge valve to activate SOP.  TIME AVAILABLE: Minutes.  TIME REQUIRED: Seconds.  REDUNDANCY SCREENS: A-PASS	A. Design - The perimeter of the fluorel bladder opening has the D-ring molded on the bladder to perform the sealing function. The sealing concept is the same as that of a standard face type O-seal, consisting of an elastomeric ring compressed and retained between smooth flat surfaces. Radial seals (silicone) and face seals (viton) are also utilized and their dimensions and rigidity of assembly provide squeeze under all tolerance conditions. The cavities, bores, and O-seal areas of the structure are now coated with a corrosion inhibiting coating (BR 127).  B. Test - Component Acceptance Test - An external leakage test per AT-E-131-2 is performed by pressurizing the item (gas side and H2O side) with 15.4 - 15.6psig nitrogen. The leakage as measured with a volumetric micrometer for 10 minutes shall be 0.5 cc/ min N2 max.  PDA Test - PDA Testing is accomplished per SEMU-60-010. The H2O side of the item is pressurized with 15.7 - 15.9 psid H2O. The leakage shall be 6 scc/hr max. as measured with a volumetric micrometer for a 60 minute period.  Certification Test - Certified for a useful life of 25 years (ref. EMUM1-0106).  C. Inspection - The sealing interfaces between the bladder covers and the water tank, the various bores and mating tubes, and the tank pressure transducer mounting pad are 100% inspected to meet dimensional and surface finish requirements.  The D-seal area of the bladder is 100% inspected for surface defects per SV798853, SV798854 and SV798855 drawings. The seal area is also 100% inspected to meet dimensional requirements.  D. Failure History - None.  E. Ground Turnaround - Tested for non-EET processing per FEMU-R-001, Water Servicing, Leakage and Gas Removal. None for EET processing.  F. Operational Use - Crew Response - EVA: When CWS data confirms depletion of primary water tanks, terminate EVA. . Training - Standard EMU training covers this failure mode. Operational Considerations - Flight rules define go/no go criteria related to EMU thermal control. EVA checklist procedures verify hardware integrity and systems operational status prior to EVA. Real Time Data System allows ground monitoring to EMU systems.

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131FM02A

B-PASS  
C-PASS

EXTRAVEHICULAR MOBILITY UNIT  
SYSTEMS SAFETY REVIEW PANEL REVIEW  
FOR THE  
I-131 PRIMARY WATER TANK ASSEMBLY  
CRITICAL ITEM LIST (CIL)

EMU CONTRACT NO. NAS 9-97150

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